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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,049	12/20/2001	David K. Chen	DP-305393	3621
22851	7590	03/25/2005	EXAMINER	
DELPHI TECHNOLOGIES, INC.			CROSS, LATOYA I	
M/C 480-410-202			ART UNIT	
PO BOX 5052			PAPER NUMBER	
TROY, MI 48007			1743	

DATE MAILED: 03/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/029,049

Applicant(s)

CHEN ET AL.

Examiner

LaToya I. Cross

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4-22-03; 1-29-04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Jepson claim 1 fails to recite, "the improvement comprising" as a part of the Jepson claim. Thus, it is difficult to ascertain what exactly Applicants are claiming. For the purpose of this Office Action, the examiner has construed the claim to mean that Applicants' invention is the ground plane electrode comprising a sensing portion and a measuring portion. The pump cell, reference cell, sensor chamber and heating device have been interpreted as Applicants' admitted prior art.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 6-11, 14-18 are rejected under 35 U.S.C. 102(e) as being anticipated by US patent 6,638,416 to Wang et al.

Wang et al teach a sensor comprising a pump cell, measuring cell, a sensor and a heater. The device also comprises an electrode (16) for temperature sensing comprising a sensing portion (70) and measuring leads (76, 78). The sensing portion (70) has two sensing leads. As seen in figure 1 of Wang et al, the measuring leads (76, 78) have an increased surface area compared to the sensor leads (70). With respect to claims 6 and 8, Wang et al teach a first insulating layer (74) that separates electrode (16) from heating device (18). With respect to claims 7 and 9, Wang et al teach contact (60) having a ground terminal, resistance measurement terminal and power terminal. A second insulating layer (82) separates heating device (18) from contact (60). Wang et al teach that the measuring leads (76, 78) are made simultaneously with the electrodes and may be formed of platinum, gold and rhodium or metal oxides, as recited in claims 10-11, 14 and 15 (col. 5, lines 40-47; col. 6, lines 44-45). Regarding claims 16-18, the ground terminal, resistance measurement terminal and power terminal are connected to the heater and measuring leads by way of vias in the insulating layers (74, 82).

It is noted that Wang et al is primarily directed to a sensor for hydrogen (whereas Applicants claim an oxygen sensor). However, since the claims are directed to the device itself, the particular analyte being detected does not limit the claims to sufficiently distinguish one device over the other. The sensor device of Wang et al comprises all of the structural features instantly claimed. Thus, the device of Wang et al anticipates the claimed invention.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 2-5, 12-13 and 19-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al in view of US patent 4,417,470 to McCracken et al and US patent 5,562,811 to Lenfers.

The disclosure of Wang et al is described above. Wang et al differ from the instant invention, with respect to claims 2-5, 12 and 13, in that there is no disclosure of the particular temperature measuring device. With respect to claims 19-28, Wang et al fails to teach determining temperature using the changes in electrical resistance of the electrodes.

McCracken et al teach an electronic temperature sensor comprising a terminal for receiving electrical power supplied to the sensor, a capacitor to serve as a filter for the output circuit, an electrical line for returning AC signals that will be converted into a temperature reading, a voltage to frequency converter and a voltage regulating network. See col. 3, line 66 – col. 4, line 18; col. 6, lines 16-48. McCracken et al teach that the temperature sensor has a very rapid response to changes in the temperature and provides a wide range of readings with a high degree of accuracy.

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Lenfers teach a temperature measurement device and method for determining temperature in a planar oxygen probe. Lenfers et al teach temperature can be measured in a planar oxygen sensor by providing two spaced terminals for measuring electrical resistance. The electrical resistance of electrodes having two terminals is simultaneously measured. The resistance value of the electrodes changes depending on the temperature. Since the resistance/temperature behavior of the electrodes is known, the actual temperature existing in the oxygen probe can be deduced therefrom (col. 3, line 60 – col. 4, line 22).

It would have been obvious to one of ordinary skill in the art to incorporate a temperature sensor, such as that taught by McCracken et al, into the sensor of Wang et al to provide a means for rapid, accurate temperature readings. Further, it would have been obvious to one of ordinary skill in the art to determine temperature, using the sensor of Wang et al modified by McCracken et al, using the method of Lenfers, wherein the temperature is deduced from the changes in electrical resistance of the electrodes having two terminals.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaToya I. Cross whose telephone number is 571-272-1256. The examiner can normally be reached on Monday-Friday 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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